

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

9.9
62974
1.2

KENTUCKY FORESTS

U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY

JUL 11 1905

CURRENT SERIAL RECORD



Northern Cumberland Unit

#5

FOREWORD

More than a decade has elapsed since the last comprehensive inventory of Kentucky's woodlands. Timber cutting, tree growth, and shifts in land use since then have led to several important changes in the timber resource. The demand for forest products has also changed. Recent emphasis on rural area development has made the necessity for fresh statistics even more pressing. Local communities and forest-based industries are finding a greater need for up-to-date data as they plan for future economic development. So, there is an urgent need for new information.

To meet these needs, the Division of Forestry of the Kentucky Department of Natural Resources and the U. S. Forest Service planned and conducted a new inventory of Kentucky forests. The field work was completed in 1964.

The McSweeney-McNary Forest Research Act of 1928 authorizes the Forest Service to complete a statewide forest inventory of Kentucky at approximate 10-year intervals. This is part of the nationwide program of maintaining a current account of our timber resources. The State of Kentucky appropriated \$120,000 for the current survey. This contribution, supplementing the Federal funds available for a regular survey, made it possible to intensify the inventory. As a result, we can provide the kind of detailed information needed for making long-range plans to meet future demands and in addition help local communities and forest-based industries make more efficient use of the forest resource.

Clarence D. Chase, Leader of the Survey Project at the Lake States Forest Experiment Station, directed the inventory. Field survey units of the Kentucky Division of Forestry and the Lake States Station collected the basic inventory data. The Lake States Station computed and tabulated the final statistics and the Central States Forest Experiment Station analyzed and reported the results.

Other organizations made important contributions to the new inventory. Personnel of the Eastern Region of the U.S. Forest Service inventoried and provided statistics for the Cumberland National Forest. The Northeastern Forest Experiment Station assisted with the computation of National Forest data. The Tennessee Valley Authority provided men and equipment to assist in surveying areas of their interest. The Soil Conservation Service and the Agricultural Stabilization and Conservation Service provided the field crews with office space and up-to-date aerial photographs. The Kentucky Department of Highways took and provided aerial photographs for parts of eastern Kentucky where no recent photographs were available. The University of Kentucky and Kentucky Department of Commerce took an active part in planning and gave valuable assistance with problems that evolved during the course of the inventory. Our thanks go to all these organizations and others who contributed.

For sampling and reporting purposes, the State was divided into seven survey units (frontispiece). This report covers the Northern Cumberland Unit. Additional information regarding the survey can be obtained from either the Division of Forestry, Kentucky Department of Natural Resources or the Central States Forest Experiment Station.

KENTUCKY FORESTS

Northern Cumberland Unit

David A. Gansner

Paul S. DeBald

Prepared in cooperation with

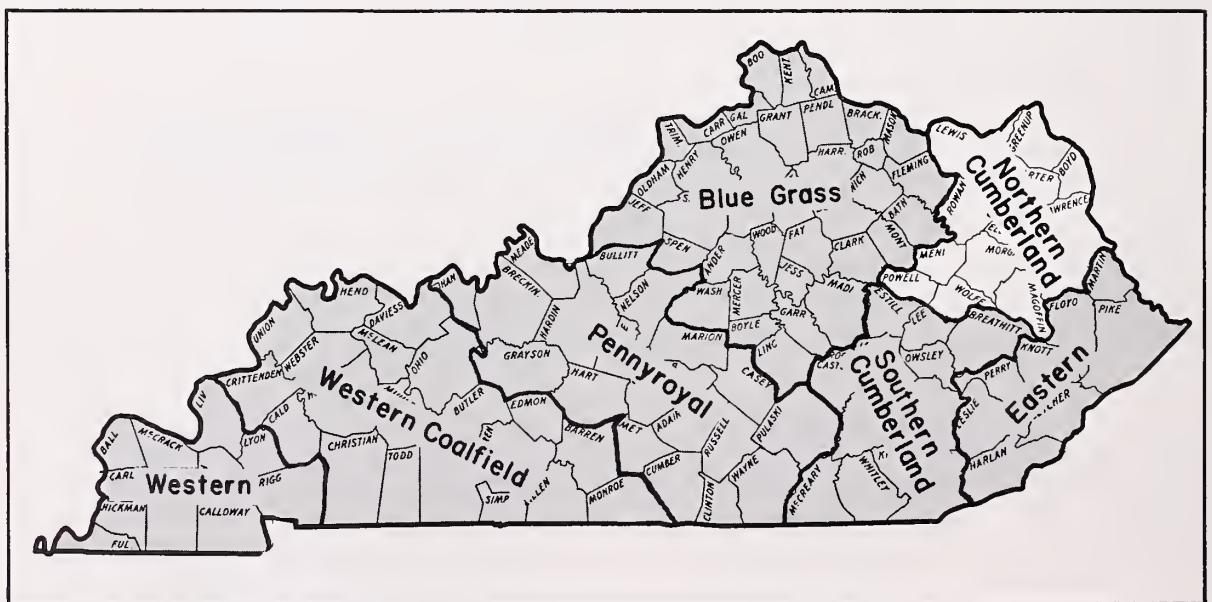
Division of Forestry, Kentucky Department of Natural Resources

U.S. Forest Service Resource Bulletin CS-5
December 1965

CONTENTS

page

1	The timber resource has changed
3	Timber industries and drain
6	The current balance between growth and cut
7	More timber can be harvested
9	Appendix
9	Forest survey procedure
9	Accuracy of survey estimate
11	Definition of terms
16	Principal commercial tree species of Kentucky
19	Statistical tables



Location of the Northern Cumberland Unit in Kentucky.

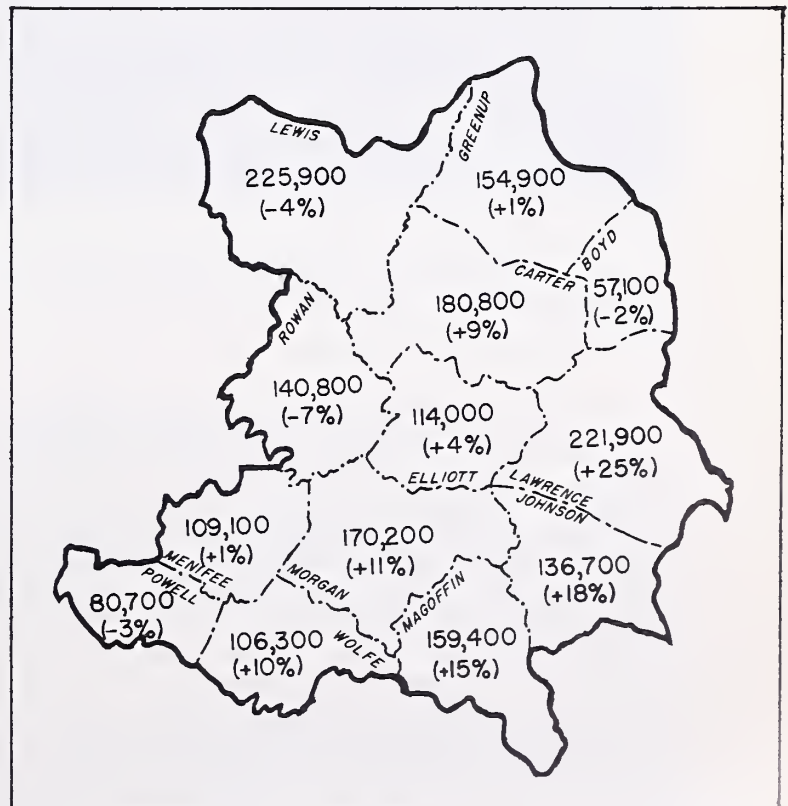
THE TIMBER RESOURCE HAS CHANGED

The Northern Cumberland Unit includes 13 counties in the northeastern corner of Kentucky. This rural area of steep slopes and narrow valleys is poorly suited to agriculture and other nonforest land use. Forests occupy almost 1.9 million acres or approximately three-fourths of the land area. Less than 1 percent of the forest has been classified noncommercial, i.e., sites too poor for timber production and areas, such as state parks, that have been reserved from cutting.

Commercial forest area has increased 110,000 acres, about 6 percent, since 1949. Much of the gain was due to a decline in farming. Submarginal fields and pastures, abandoned during the fourteen years between forest inventories, have become restocked with tree cover. Most of this new forest is in an early stage of development and has little or no merchantable timber volume.

Increases in forest area were practically regionwide with gains occurring in 9 of the 13 counties (fig. 1). The largest gains took place in three of the Unit's most heavily forested counties—Lawrence, Johnson, and Magoffin. The Region's woodland is well distributed. Only Boyd County, which contains the City of Ashland, is less than 70 percent forested. Lewis has more forest land than any other county (226,000 acres) but Magoffin is the most heavily forested county (83 percent of the land area).

FIGURE 1.—Acreage of commercial forest land by county, 1963, and percentage change since 1949.



Pine occurs more frequently in the Northern Cumberland than in most other parts of the State and more than one-fourth of Kentucky's pine and oak-pine forests are found here (fig. 2). But stands of hardwood predominate. Almost four-fifths of the commercial forest is classified as oak-hickory or central mixed hardwood.



FIGURE 2.—There are a quarter million acres of pine and oak-pine forest in the Region.

About 94 percent of the commercial forest is privately owned and most of the remainder is National Forest. One-fourth of the Cumberland National Forest is located in this Region.

Between 1949 and 1963 the volume of growing stock in the Region increased 33 percent from 891 to 1,188 million cubic feet.¹ This volume gain was larger than in any other survey unit of Kentucky. Although a small part of the increase was a result of the 6 percent boost in forest area, most of it was due to general improvements in stocking in stands throughout the Unit. The present regional average of 640 cubic feet of growing stock per commercial forest acre is 130 cubic feet higher than in 1949.

¹ The 1949 estimates of growing-stock volume were not directly comparable with those of 1963 because they did not include merchantable material in the upper-stem portion of hardwood sawtimber-size trees. The 1949 data were revised to permit comparisons.

Increases in volume were recorded for all sizes of timber but the most impressive gains took place on trees in the 12-inch to 18-inch d.b.h. classes (fig. 3). This is good news for most local wood-using industries because these trees, which are beginning to develop quality growth, represent their timber supply for the immediate future. Sawtimber volume enlarged almost 50 percent to 3,935 million board feet. This amounted to an average yearly increase of more than 40 board feet per acre.

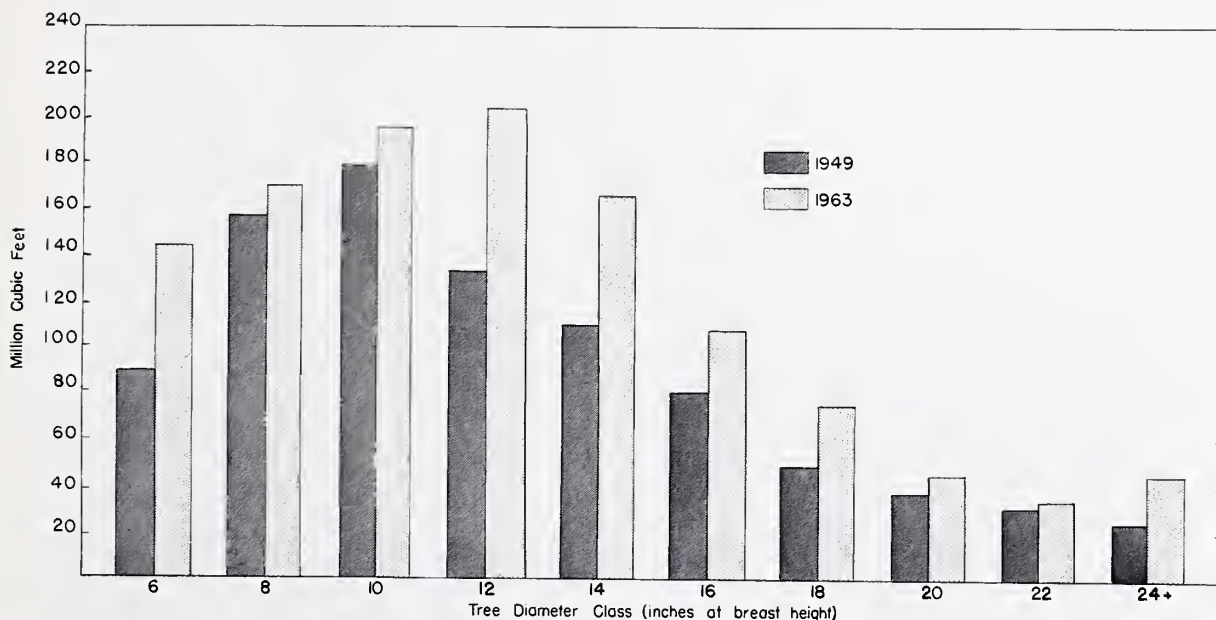


FIGURE 3.—Change in volume of growing stock by diameter class, 1949-1963.

Volume is up for most of the important timber species in the Region. Increases in oak volume were very sharp and these species now account for about three-fifths of the merchantable volume (figs. 4 and 5). There were also noteworthy volume gains for yellow-poplar and the yellow pines, particularly Virginia pine. The volume of yellow-poplar sawtimber now exceeds that of hickory.

TIMBER INDUSTRIES AND DRAIN

The Northern Cumberland Unit has a large number of primary wood-using firms considering the size of its timber resource. Yet the annual drain on the growing stock, about 1.3 percent of the inventory, is lower than average for Kentucky. At present, there are about 90 wood-using plants in the Region, but practically all of them are small sawmills consuming less than a million board feet of saw logs annually. In 1962, the Region's sawmills produced 64 million board feet of lumber, about 14 percent of Kentucky's total lumber output for that year. Included among the other primary wood-using establishments are three stave mills, two charcoal plants, and a creosote treating plant (fig. 6).

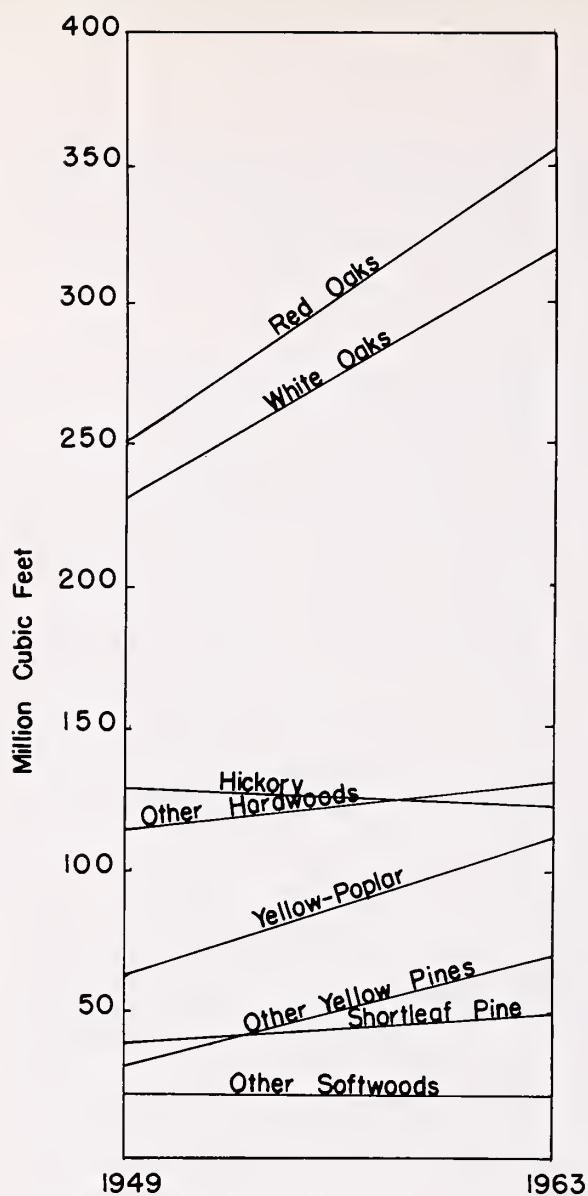


FIGURE 4.—Change in growing-stock volume by species groups, 1949-1963.

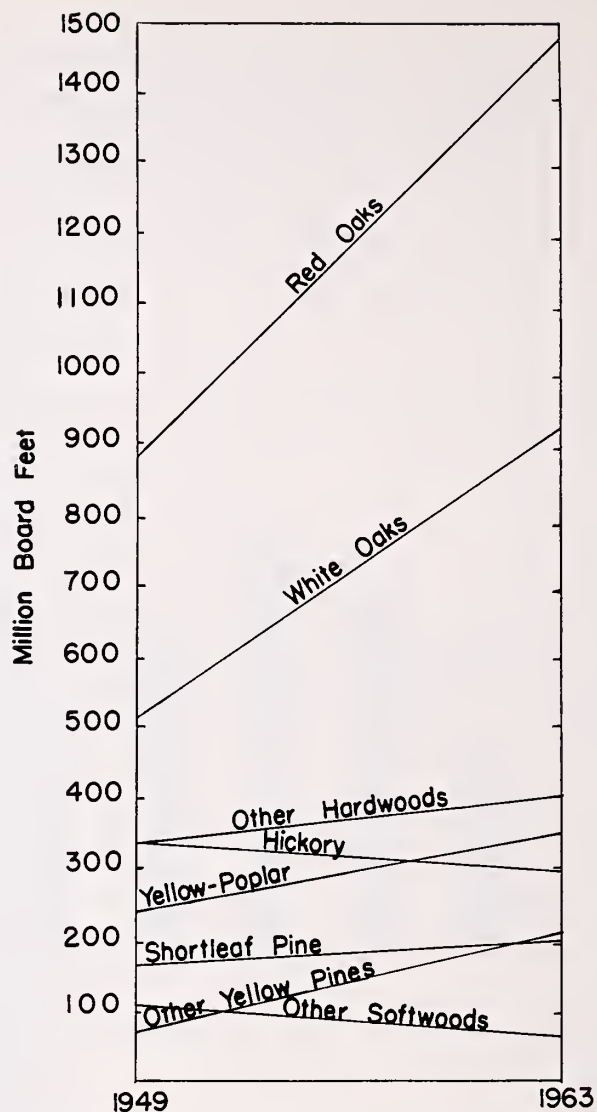


FIGURE 5.—Change in sawtimber volume by species groups, 1949-1963.

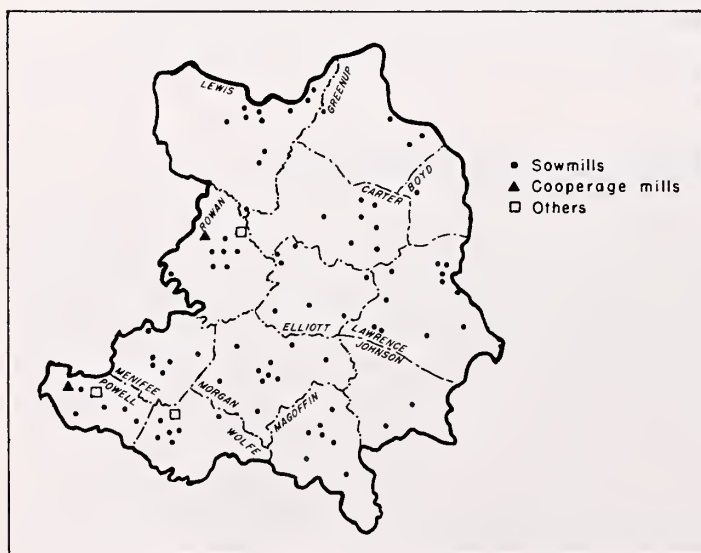


FIGURE 6.—Location of primary wood-using industries, 1963.

A large amount of pulpwood is cut from the Region each year. In 1962, the cut amounted to 50,000 cords of roundwood, most of it hardwood. This was about two-thirds of the total pulpwood harvest from Kentucky during the year (fig. 7). There are no wood-using pulpmills in Kentucky, so all of the pulpwood harvest was shipped to mills in adjacent states.



FIGURE 7.—Each year, a large volume of pulpwood is harvested from the Northern Cumberland Unit.

The total cut of growing stock in the Region during 1962 amounted to almost 16 million cubic feet, about 13 percent of the total harvest from Kentucky. Most of the cut was from trees of sawtimber size. More than 80 million board feet of saw log material were harvested, with oaks accounting for 43 percent of this total. Another 27 percent of the sawtimber cut was yellow-poplar. Basswood, beech, shortleaf pine, and hickory ranked next in order of importance. The 22 million board feet of yellow-poplar sawtimber cut from the Region in 1962 was more than one-fourth of the total yellow-poplar harvest in Kentucky. One-fifth of the pole-timber volume harvested was shortleaf pine, most of which went for pulpwood and fenceposts.

THE CURRENT BALANCE BETWEEN GROWTH AND CUT

The Region's inventory volume is growing at a rate of 64 million cubic feet per year or 5.4 percent before allowances are made for cutting. Sawtimber volume is growing at an annual rate of 296 million board feet or 7.5 percent per year. On a per-acre basis, these growth rates average 34 cubic feet of growing stock and 159 board feet of sawtimber per year.

Although average volume growth per forest acre is higher than in most other parts of the State, it still is well below the capacity of this Region's forests. Increases in productivity are limited by poor stocking. Only 44 percent of the commercial forest is well stocked with merchantable or potentially merchantable growing-stock trees. And only 11 percent of the forest is in a highly productive condition; i.e., well stocked with desirable growing-stock trees or expected to attain such stocking in the near future. Large increases in productivity cannot be expected until stocking improves.

While volume growth is lower than it might be, it still exceeds the cut (fig. 8). About two-thirds of the current growth occurs on trees of poletimber size while four-fifths of the cut is from sawtimber trees. But growth exceeds cut for both kinds of timber. A comparison of current growth with the 1962 cut indicates that all growing stock is increasing more than 4 percent and sawtimber volume more than 5 percent annually.

With the exceptions of select red oak and basswood, all of the heavily used timber species—the other red oaks, white oak, yellow-poplar, beech, pine, etc.—are growing at a faster rate than they are being cut.

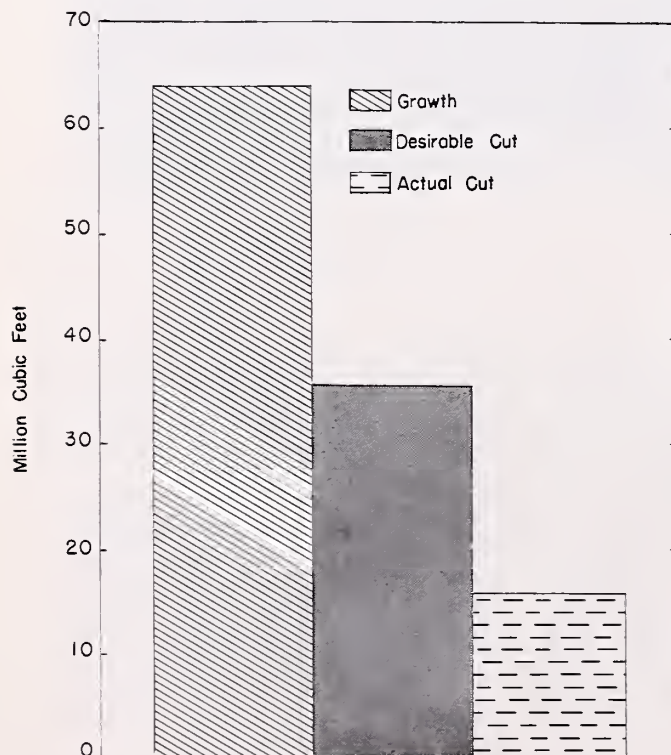


FIGURE 8.—Growth, desirable cut and actual cut of growing stock, 1963.

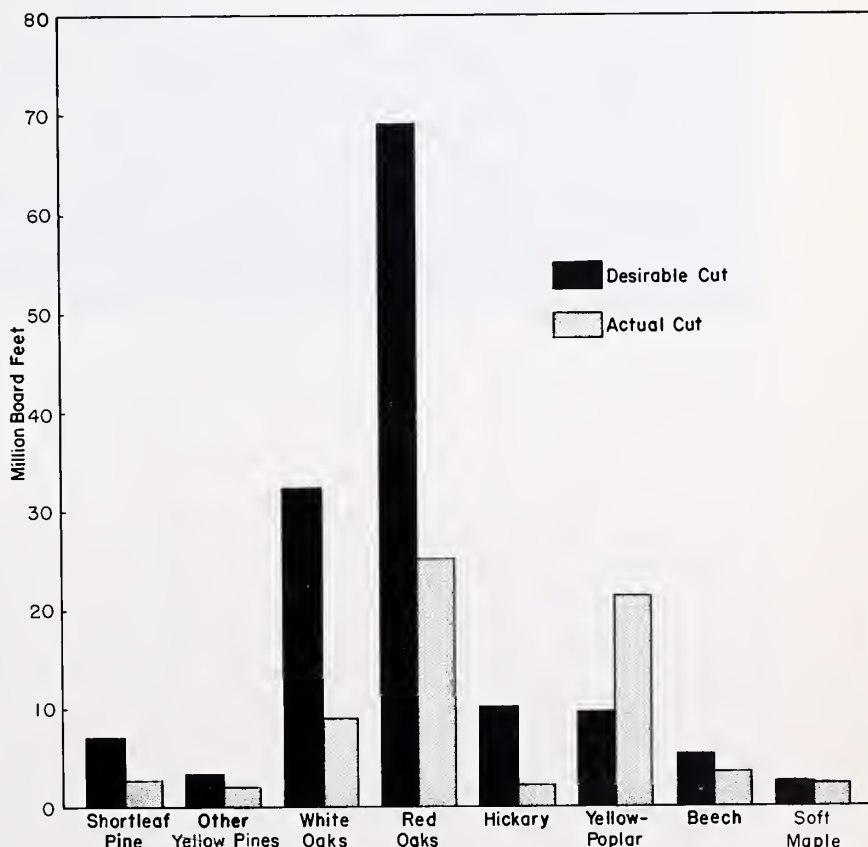
MORE TIMBER CAN BE HARVESTED

A desirable cut of more than 35 million cubic feet of growing stock, including 147 million board feet of sawtimber, has been estimated for the Northern Cumberland Unit. This is the volume that should be removed annually in harvest cuts and commercial thinnings. The aim of the desirable cut is to improve timber productivity with the long-range goal of establishing a regulated forest producing a sustained yield of wood for the manufacture of consumer goods. The desirable cut provides a useful silvicultural standard with which to compare the actual cut to find where shortages and surpluses occur in the timber supply.

In the Northern Cumberland Unit the desirable cut of growing stock exceeds the current actual cut (that made in 1962) by about 20 million cubic feet (fig. 8). The annual cut of growing stock could be doubled and still not exceed the cut recommended. However, the excess of desirable cut over actual cut is not the same for all sizes and species of timber. The ratio of desirable cut to actual cut for poletimber volume is about 3 to 1, indicating that if markets were available, three times as much poletimber could be harvested each year. The desirable cut of sawtimber volume also exceeds the actual cut, but by a lesser ratio of 1.8 to 1.

Actual cut exceeds desirable cut for a few important timber species such as the select red oaks, yellow-poplar, basswood, and black walnut. Deficits are generally greater in the large diameter classes where high quality is concentrated. But most other species can sustain additional cutting (fig. 9). An additional 67

FIGURE 9.—*Desirable cut and actual cut of sawtimber for selected species, 1963.*



million board feet of oak sawtimber could be harvested annually (fig. 10). This surplus which is twice the present cut of oak sawtimber would be sufficient to support several new firms. Large amounts of yellow pine, hickory, and beech sawtimber are also available for cutting.



FIGURE 10.—The cut of oak sawtimber could be greatly expanded.

APPENDIX

Forest Survey Procedure

The resource statistics presented in this report were obtained from two sources: a timber-management-plan forest inventory of the Cumberland National Forest and a survey of all other forest land. Both were sampling surveys designed to yield reliable statistics for large areas. Both combined aerial photo interpretation and field work to minimize costs. Both employed electronic, data-processing machines to reduce computing time and generate more usable statistics than could be done by hand methods.

To attain specific levels of statistical accuracy, triple sampling was used. A large number of points were first examined on aerial photographs to determine the proportions of forest and nonforest land. One-fourth of the forest points were stereoscopically classified as to forest type, stand size, stocking, and site. One-twelfth of these points were in turn examined on the ground. The ground classification provided a check on photo classification and a means of improving estimates of forest area.

At each forest ground-check point a plot was established. Trees were classified and measured as a basis for estimating timber volume, growth, mortality, and quality. Ownership was determined for each plot.

Timber-cut information was based on forest-industry production records for 1962, on stump counts at forest-inventory plots, cutting records from large owners, and utilization factors based on a logging-residue study.

Accuracy of Survey Estimate

Estimates of forest area and timber volume are subject to two kinds of errors: (1) nonsampling errors caused by mistakes in judgment, recording of measurements, or in calculations, and (2) sampling errors inherent in statistical work.

Nonsampling errors are not measurable and cannot be shown. They are avoided as much as possible through training of personnel, close supervision, and careful checking of all phases of the work.

Sampling errors are subject to the laws of chance and may be estimated by statistical methods. These errors are held to acceptable levels commensurate with the values involved and funds available by adjusting the survey design and the intensity of the sample. With a probability of two out of three (that is, relatively good) the accompanying table shows the accuracy of the data presented in this report. The sampling error of a survey is less for a large class or block than for a smaller class or other subdivision. Some of the resource statistics presented in this report have such large errors that it would be unwise to use them alone—but if they are combined with other figures the error may be reduced enough to warrant their use. Weak figures are shown to allow various combinations of data.

*Guides for judging accuracy by size of area and
by volume of growing stock and sawtimber*

Commercial forest land		Standard error of sampling	
<u>Acres</u>		<u>Percent</u>	
1,857,800		1.2	
1,000,000		1.6	
500,000		3.0	
300,000		3.9	
100,000		6.8	
50,000		9.6	
30,000		12.4	
10,000		21.5	
5,000		30.4	
3,000		39.2	

Growing stock volumes	Standard error of sampling	Sawtimber volumes	Standard error of sampling
<u>Thousand cu. ft.</u>	<u>Percent</u>	<u>Thousand bd. ft.</u>	<u>Percent</u>
1,188,130	2.5	3,934,710	4.6
1,000,000	2.7	1,000,000	9.1
500,000	3.9	500,000	12.9
300,000	5.0	300,000	16.6
100,000	8.7	100,000	28.8
50,000	12.3	50,000	40.8
30,000	15.9	30,000	52.7
10,000	27.5	10,000	91.2
5,000	38.9		
3,000	50.2		

The occurrence of a (—) in the statistical tables of this report indicates one of two things:

- (1) No units were measured by the inventory.
- (2) The quantity of data measured was insignificant and did not warrant reporting.

Definition of Terms

Land and Forest Area

Gross area.—The entire area of land and water as determined by the Census Bureau.

Land area.—The area of dry land and land temporarily or partially covered by water such as marshes, swamps, and flood plains; streams, and sloughs less than $\frac{1}{8}$ mile wide; and lakes, reservoirs, and ponds smaller than 40 acres.

Forest land.—Land at least 10 percent stocked by forest trees of any size, or formerly having such tree cover and not currently developed for nonforest use. Does not include urban or thickly settled residential and resort areas, city parks, orchards, farmsteads, improved roads, or land developed and maintained for nonforest use by fencing, seeding, and so forth. The minimum area for classification of forest land or classes of forest land was 1 acre. Roadside, streamside, and shelterbelt strips of timber having a crown width of at least 120 feet qualified as forest land. Unimproved roads and trails, streams, and clearings in forest land were included as forest if less than 120 feet wide.

Commercial-forest land.—Forest land that is producing or capable of producing crops of industrial wood and not withdrawn from timber utilization by statute or administrative regulation.

Noncommercial-forest land.—Unproductive forest land incapable of yielding crops of industrial wood because of adverse site conditions; and productive, public-forest land withdrawn from commercial timber use through statute or administrative regulation.

Ownership

National Forest.—Federal land that has been designated by Executive order or statute as National Forest, including purchase units; and other land under the administration of the Forest Service, including experimental areas and Bankhead-Jones title III land.

Other public.—All publicly owned land other than National Forest.

Forest industry.—Land owned by companies or individuals operating wood-using plants.

Farmer and miscellaneous private.—All privately owned land except forest industry land.

Forest Types

Forest type. — A classification of forest land based upon species composition considering all live trees.

Southern pine. — Forests in which 50 percent or more of the stocking is short-leaf or other southern yellow pines, singly or in combination.

Oak-pine. — Forests in which 50 percent or more of the stocking is hardwoods (usually upland oaks) but in which southern pine makes up at least 25 percent of the stocking.

White oak. — Forests in which 50 percent or more of the stocking is white oak, except stands that classify as redcedar-hardwoods or oak-pine.

Oak-hickory. — Forests in which 50 percent or more of the stocking is upland oaks or hickories, singly or in combination, except stands that classify as oak-pine, redcedar-hardwoods, or white oak.

Central mixed hardwoods. — Forests in which 50 percent or more of the stocking is a combination of hardwood species, principally, yellow-poplar, maple, beech, basswood, black walnut, elm, and northern red oak, except stands that classify as redcedar-hardwoods, oak-pine, oak-hickory, maple-beech, or elm-ash-cottonwood.

Maple-beech. — Forests in which 50 percent or more of the stocking is maple or beech, singly or in combination, except stands that classify as redcedar-hardwoods or oak-pine.

Elm-ash-cottonwood. — Forests in which 50 percent or more of the stocking is elm, ash, or cottonwood, singly or in combination except stands that classify as redcedar-hardwoods or oak-pine.

Stand-Size Classes

Stand-size class. — A classification of forest land based on the predominant size of timber present—sawtimber, poletimber, or seedlings and saplings.

Sawtimber stands. — Stands at least 10 percent stocked with growing-stock trees, with half or more of this stocking in sawtimber or poletimber trees, and with sawtimber stocking at least equal to poletimber stocking.

Poletimber stands. — Stands at least 10 percent stocked with growing-stock trees, with half or more of this stocking in sawtimber and/or poletimber trees, and with poletimber stocking exceeding that of sawtimber.

Seedling-sapling stands. — Stands at least 10 percent stocked with growing-stock trees and with seedlings and/or saplings comprising more than half of this stocking.

Nonstocked areas. — Commercial-forest land less than 10 percent stocked with growing-stock trees.

Stocking Classes

Stocking class. — A classification of commercial-forest land based on the percent of area occupied by growing-stock trees. *Growing-stock trees* include all live trees except culls.

Well stocked. — Stands that are 70 percent or more stocked with growing-stock trees.

Medium stocked. — Stands that are 40 to 69 percent stocked with growing-stock trees.

Poorly stocked. — Stands that are from 10 to 39 percent stocked with growing-stock trees.

Nonstocked. — Areas of commercial-forest land not qualifying as sawtimber, poletimber, or seedling and sapling stands. These areas may contain some volume but less than 10 percent of the growing space is effectively utilized by growing stock.

Area-Condition Classes

A classification of commercial-forest land based upon stocking by desirable growing-stock trees and conditions affecting current and prospective timber growth. *Desirable growing-stock trees* are those that have no serious defects in quality limiting present or prospective use. They have relatively high vigor and contain no pathogens that may result in death or serious deterioration before rotation age. These are the trees that would be favored in silvicultural operations.

Desirable. — Areas 70 percent or more stocked with desirable trees.

Moderate and favorable. — Areas 40 to 70 percent stocked with desirable trees and with 30 percent or less of the area having other trees and/or inhibiting vegetation or surface conditions that will prevent occupancy by desirable trees.

Moderate and unfavorable. — Areas 40 to 70 percent stocked with desirable trees and with more than 30 percent of the area having other trees and/or inhibiting vegetation or surface conditions that will prevent occupancy by desirable trees.

Poor but favorable. — Areas less than 40 percent stocked with desirable trees and with 30 percent or less of the area having other trees and/or inhibiting vegetation or surface conditions that prevent occupancy by desirable trees.

Poor and unfavorable. — Areas less than 40 percent stocked with desirable trees and with more than 30 percent of the area having other trees and/or inhibiting vegetation or surface conditions that prevent occupancy by desirable species.

Volume Classification

Growing-stock volume. — Cubic-foot volume of sound wood in the bole of sawtimber and poletimber trees from the stump to a minimum 4-inch-top diameter outside bark or to the point where the central stem breaks into limbs.

Sawtimber volume. — Net volume of the saw-log portion of live sawtimber trees in board feet, International ¼-inch rule. The saw-log portion extends from stump to a minimum top diameter outside bark of 6 inches for softwoods and 8 inches for hardwoods or to the point where defects reduce saw-log quality below Standard Log Grade 3 or Tie-and-Timber Grade.

Tree-Size Classes

Sawtimber trees. — Live trees of commercial species containing at least an 8-foot saw log. Softwoods must be at least 9 inches and hardwoods at least 11 inches d.b.h. outside bark.

Poletimber trees. — Live trees of commercial species at least 5 inches d.b.h. but smaller than sawtimber size, and of good form and vigor.

Saplings. — Live trees of commercial species 1 to 5 inches d.b.h. and of good form and vigor.

Seedlings. — Live trees of commercial species less than 1 inch d.b.h. that are expected to survive.

Growth

Net annual growth. — The annual change in volume of sound wood in live sawtimber and poletimber trees and the total volume of trees entering these classes through ingrowth less volume losses resulting from natural causes.

Growing-stock growth. — Net annual growth of pole and sawtimber trees in cubic feet.

Sawtimber growth. — Net annual growth of sawtimber trees in board feet, International ¼-inch rule.

Timber Cut

Timber cut from growing stock. — The net cubic-foot volume of sound wood in live sawtimber and poletimber trees cut for forest products during a specified year, including both roundwood products and logging residues.

Timber cut from sawtimber. — The net board-foot volume of live sawtimber trees cut for forest products during a specified year, including both roundwood products and logging residues.

Desirable cut (formerly called allowable cut).—The net volume of live saw-timber and poletimber trees that can be cut annually during the next 10 years in commercial-logging operations while maintaining or increasing growing stock and while effecting a reasonably even distribution of age classes below the rotation age selected for each type. It includes harvest and improvement cuts yielding 3 cords or more per acre, and one-tenth of the entire net volume of stands 10 or more years beyond the rotation age. Desirable cut includes all timber of merchantable size that should be cut from commercial-forest land in order to salvage, rejuvenate, or improve the stands and increase the growth without regard to restraints of ownership, inaccessibility, or the profit motive. Some of this timber may not be available for sale, too hard to get at or too scattered, or of currently unwanted species or quality.

*Rotation ages for saw-log trees in extensively managed stands
by forest-type and site-index classes*

(In years)

Forest type	Site index (50-year height in feet)*						
	40	50	60	70	80	90	100+
Southern pine	120	110	90	--	--	--	--
Redcedar-hardwoods	120	110	90	--	--	--	--
Oak-pine	120	110	90	--	--	--	--
White oak	120	110	90	80	75	70	--
Oak-hickory	120	110	90	80	75	70	--
Central mixed hardwoods	--	110	90	80	75	70	60
Maple-beech	--	100	100	100	100	--	--
Oak-gum-cypress	--	--	--	80	75	70	60
Elm-ash-cottonwood**	--	--	--	80	70	60	60

*Except in the case of cottonwood for which it is total height at 25 years.

**The rotation for cottonwood is half of the age shown.

Miscellaneous Definitions

Site class.—A classification of commercial-forest land based on potential yields in cubic feet per acre of mean annual growth at culmination of increment in fully stocked stands of desirable trees.

D.b.h. (Diameter at breast height).—Tree diameter in inches measured outside the bark at a point 4½ feet above the ground.

Diameter class.—Where data are presented in 2-inch diameter classes, they include diameters from 1.0 inches below to 0.9 inches above the stated midpoint; e.g., trees 5.0 inches to and including 6.9 inches, are included in the 6-inch class.

Principal Commercial Tree Species of Kentucky²

Softwood Species

Cypress (baldcypress)	<i>Taxodium distichum</i> (L.) Rich.
Hemlock (eastern)	<i>Tsuga canadensis</i> (L.) Carr.
Pine group includes —	
Shortleaf pine	<i>Pinus echinata</i> Mill.
Other yellow pines:	
Pitch pine	<i>P. rigida</i> Mill.
Virginia pine	<i>P. virginiana</i> Mill.
White pine (eastern)	<i>P. strobus</i> L.
Redcedar (eastern)	<i>Juniperus virginiana</i> L.

Hardwood Species

Ash	<i>Fraxinus</i> L. species
Basswood	<i>Tilia</i> L. species
Beech (American)	<i>Fagus grandifolia</i> Ehrh.
Birch (yellow)	<i>Betula alleghaniensis</i> Britton
Blackgum	<i>Nyssa</i> L. species
Black walnut	<i>Juglans nigra</i> L.
Cottonwood (eastern)	<i>Populus deltoides</i> Bartr.
Hickory	<i>Carya</i> Nutt. species
Maple (hard) includes —	
Black maple	<i>Acer nigrum</i> Michx. f.
Sugar maple	<i>A. saccharum</i> Marsh.
Maple (soft) includes —	
Boxelder	<i>A. negundo</i> L.
Red maple	<i>A. rubrum</i> var. <i>rubrum</i> L.
Silver maple	<i>A. saccharinum</i> L.
Oak group includes —	
Select red oaks:	
Cherrybark oak	<i>Quercus falcata</i> var. <i>pagodaefolia</i> Ell.
Northern red oak	<i>Q. rubra</i> L.
Shumard oak	<i>Q. shumardii</i> Buckl.
Other red oaks:	
Black oak	<i>Q. velutina</i> Lam.
Pin oak	<i>Q. palustris</i> Muenchh.
Scarlet oak	<i>Q. coccinea</i> Muenchh.
Shingle oak	<i>Q. imbricaria</i> Michx.
Southern red oak	<i>Q. falcata</i> Michx.
Water oak	<i>Q. nigra</i> L.
Willow oak	<i>Q. phellos</i> L.
Select white oaks:	
Bur oak	<i>Q. macrocarpa</i> Michx.
Chinkapin oak	<i>Q. muehlenbergii</i> Engelm.

²The common and scientific names are based on: Little, Elbert L., Jr. CHECK LIST OF NATIVE AND NATURALIZED TREES OF THE UNITED STATES (INCLUDING ALASKA). U.S. Dept. Agr. Handb. 41, 472 pp. 1953.

Swamp chestnut oak	<i>Q. michauxii</i> Nutt.
Swamp white oak	<i>Q. bicolor</i> Willd.
White oak	<i>Q. alba</i> L.
Other white oaks:	
Chestnut oak	<i>Q. prinus</i> L.
Overcup oak	<i>Q. lyrata</i> Walt.
Post oak	<i>Q. stellata</i> var. <i>stellata</i> Wangenh.
Sweetgum	<i>Liquidambar styraciflua</i> L.
Yellow-poplar	<i>Liriodendron tulipifera</i> L.
Other hardwoods includes —	
Birch (river)	<i>Betula nigra</i> L.
Buckeye (Ohio)	<i>Aesculus glabra</i> Willd.
Buckeye (yellow)	<i>A. octandra</i> Marsh.
Butternut	<i>Juglans cinerea</i> L.
Cherry (black)	<i>Prunus serotina</i> Ehrh.
Coffeetree (Kentucky)	<i>Gymnocladus dioica</i> (L.) K. Koch.
Cucumbertree	<i>Magnolia acuminata</i> L.
Dogwood (flowering)	<i>Cornus florida</i> L.
Elm	<i>Ulmus</i> L. species
Hackberry	<i>Celtis occidentalis</i> L.
Honeylocust	<i>Gleditsia triacanthos</i> L.
Locust (black)	<i>Robinia pseudoacacia</i> L.
Mulberry (red)	<i>Morus rubra</i> L.
Osage-orange	<i>Maclura pomifera</i> (Raf.) Schneid.
Persimmon (common)	<i>Diospyros virginiana</i> L.
Sassafras	<i>Sassafras albidum</i> (Nutt.) Nees
Sycamore (American)	<i>Platanus occidentalis</i> L.
Willow (black)	<i>Salix nigra</i> Marsh.

Statistical Tables

The following tables present forest-resource data for the Northern Cumberland Unit and each of its 13 counties. Tables 1-7 contain information on land and forest area; tables 8-12 information on numbers of trees and timber volume; and tables 13-18 information on growth, cut, and desirable cut. Data for individual counties are shown in tables 1, 4, 10, 14, and 18.

Table 1. -- *Area of land and forest land by counties*
Northern Cumberland Unit, Kentucky, 1963

County	Gross area*	Land area*	Forest land			Commercial forest as a percent of land area
			All forest	Non- commercial	Commercial	
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Percent</i>
Boyd	103,000	101,700	57,200	100	57,100	56.1
Carter	257,300	257,300	181,900	1,100	180,800	70.3
Elliott	153,600	153,600	114,100	100	114,000	74.2
Greenup	229,100	224,000	158,000	3,100	154,900	69.2
Johnson	169,000	169,000	136,900	200	136,700	80.9
Lawrence	272,000	272,000	222,800	900	221,900	81.6
Lewis	318,700	310,400	226,200	300	225,900	72.8
Magoffin	193,900	193,900	161,000	1,600	159,400	82.2
Menifee	134,400	134,400	109,400	300	109,100	81.2
Morgan	236,200	236,200	171,100	900	170,200	72.1
Powell	110,700	110,700	82,200	1,500	80,700	72.9
Rowan	185,600	185,600	141,800	1,000	140,800	75.9
Wolfe	145,300	145,300	106,800	500	106,300	73.2
Total	2,508,800	2,494,100	1,869,400	11,600	1,857,800	74.5

* Gross area and land area are from Bureau of Census, 1960. Land area includes 6,400 acres in small bodies of water.

Table 2. -- *Area of commercial forest land by ownership and stand-size class*
Northern Cumberland Unit, Kentucky, 1963

(In acres)

Ownership class	All Stands	Saw- timber	Pole- timber	Seedlings and saplings	Non- stocked
National forest	109,200	84,600	23,100	600	900
Other public	800	400	200	200	--
Forest industry	5,200	5,200	--	--	--
Farmer and miscellaneous private	1,742,600	757,300	480,600	504,700	--
All ownerships	1,857,800	847,500	503,900	505,500	900

Table 3. -- *Area of commercial forest land by stocking and stand-size class*
Northern Cumberland Unit, Kentucky, 1963

(In acres)

Stocking class (percent)	All stands	Saw- timber	Pole- timber	Seedlings and saplings	Non- stocked
70 or more	819,400	410,800	214,000	194,600	--
40-70	896,300	403,800	237,100	255,400	--
10-40	141,200	32,900	52,800	55,500	--
Less than 10	900	--	--	--	900
All classes	1,857,800	847,500	503,900	505,500	900

Table 4. -- *Area of commercial forest land by forest type and stand-size class*
Northern Cumberland Unit, Kentucky, 1963

(In acres)

Forest type	All stands	Saw- timber	Pole- timber	Seedlings and saplings	Non- stocked
Southern pine	99,500	43,300	26,300	29,900	--
Oak-pine	151,200	64,400	48,000	38,300	500
White oak	89,400	38,900	43,400	7,100	--
Oak-hickory	917,900	501,400	253,000	163,200	300
Central mixed hardwoods	534,200	178,100	105,300	250,700	100
Maple-beech	43,500	21,000	22,500	--	--
Elm-ash-cottonwood	22,100	400	5,400	16,300	--
All types	1,857,800	847,500	503,900	505,500	900

BOYD COUNTY

Southern pine	4,500	3,300	300	900	--
Oak-pine	5,700	1,500	2,600	1,600	--
White oak	2,700	1,200	1,400	100	--
Oak-hickory	25,600	12,900	7,100	5,600	--
Central mixed hardwoods	16,400	4,200	3,000	9,200	--
Maple-beech	1,000	600	400	--	--
Elm-ash-cottonwood	1,200	--	100	1,100	--
All types	57,100	23,700	14,900	18,500	--

CARTER COUNTY

Southern pine	12,300	4,700	3,100	4,500	--
Oak-pine	16,600	6,100	5,700	4,800	--
White oak	9,400	3,900	5,000	500	--
Oak-hickory	81,300	42,000	23,100	16,200	--
Central mixed hardwoods	54,600	15,500	10,400	28,700	--
Maple beech	4,900	2,300	2,600	--	--
Elm-ash-cottonwood	1,700	--	300	1,400	--
All types	180,800	74,500	50,200	56,100	--

Table 4. -- *Area of commercial forest land by forest type and stand-size class*
Northern Cumberland Unit, Kentucky, 1963 -- Continued

(In acres)

ELLIOTT COUNTY

Forest type	All Stands	Saw- timber	Pole- timber	Seedlings and saplings	Non- stocked
Southern pine	14,100	7,500	3,000	3,600	--
Oak-pine	10,100	5,300	3,600	1,200	--
White oak	6,300	2,900	2,900	500	--
Oak-hickory	53,400	31,700	14,200	7,500	--
Central mixed hardwoods	26,900	8,800	6,100	12,000	--
Maple-beech	2,700	1,200	1,500	--	--
Elm-ash-cottonwood	500	--	--	500	--
All types	114,000	57,400	31,300	25,300	--

GREENUP COUNTY

Southern pine	6,900	2,600	1,700	2,600	--
Oak-pine	12,600	6,700	3,200	2,700	--
White oak	9,100	5,000	3,300	800	--
Oak-hickory	77,600	43,500	20,000	14,100	--
Central mixed hardwoods	43,000	15,400	7,600	20,000	--
Maple-beech	4,800	2,500	2,300	--	--
Elm-ash-cottonwood	900	--	--	900	--
All types	154,900	75,700	38,100	41,100	--

JOHNSON COUNTY

Southern pine	5,700	2,500	1,000	2,200	--
Oak-pine	10,500	5,900	2,700	1,900	--
White oak	8,000	4,600	2,700	700	--
Oak-hickory	70,100	37,800	19,700	12,600	--
Central mixed hardwoods	37,600	14,000	7,900	15,700	--
Maple-beech	4,000	1,700	2,300	--	--
Elm-ash-cottonwood	800	--	400	400	--
All types	136,700	66,500	36,700	33,500	--

LAWRENCE COUNTY

Southern pine	10,800	3,100	1,700	6,000	--
Oak-pine	16,800	2,800	5,100	8,900	--
White oak	8,500	500	7,000	1,000	--
Oak-hickory	91,200	27,900	34,200	29,100	--
Central mixed hardwoods	86,400	16,000	13,800	56,600	--
Maple-beech	3,200	1,200	2,000	--	--
Elm-ash-cottonwood	5,000	--	1,500	3,500	--
All types	221,900	51,500	65,300	105,100	--

LEWIS COUNTY

Southern pine	3,600	1,900	1,300	400	--
Oak-pine	14,700	7,700	3,100	3,900	--
White oak	13,500	7,400	5,500	600	--
Oak-hickory	130,800	83,200	32,000	15,600	--
Central mixed hardwoods	55,000	22,200	10,300	22,500	--
Maple-beech	6,900	3,000	3,900	--	--
Elm-ash-cottonwood	1,400	--	100	1,300	--
All types	225,900	125,400	56,200	44,300	--

Table 4. -- *Area of commercial forest land by forest type and stand-size class*
Northern Cumberland Unit, Kentucky, 1963 -- Continued

(In acres)

MAGOFFIN COUNTY

Forest type	All stands	Saw-timber	Pole-timber	Seedlings and saplings	Non-stocked
Southern pine	3,300	1,000	1,900	400	--
Oak-pine	8,700	2,100	2,100	4,500	--
White oak	4,800	1,300	2,600	900	--
Oak-hickory	78,800	35,500	22,800	20,500	--
Central mixed hardwoods	56,300	15,900	12,300	28,100	--
Maple-beech	3,500	2,400	1,100	--	--
Elm-ash-cottonwood	4,000	--	1,600	2,400	--
All types	159,400	58,200	44,400	56,800	--

MENIFEE COUNTY

Southern pine	8,400	3,200	4,300	900	--
Oak-pine	12,100	6,100	4,600	1,200	200
White oak	4,800	2,400	2,100	300	--
Oak-hickory	51,500	33,900	12,400	5,200	--
Central mixed hardwoods	29,900	16,000	7,700	6,200	--
Maple-beech	2,000	900	1,100	--	--
Elm-ash-cottonwood	400	100	--	300	--
All types	109,100	62,600	32,200	14,100	200

MORGAN COUNTY

Southern pine	6,800	2,700	1,300	2,800	--
Oak-pine	12,300	3,900	4,500	3,900	--
White oak	7,300	3,000	3,500	800	--
Oak-hickory	86,100	48,800	21,500	15,700	100
Central mixed hardwoods	50,200	15,700	10,300	24,200	--
Maple-beech	3,700	2,000	1,700	--	--
Elm-ash-cottonwood	3,800	--	1,100	2,700	--
All types	170,200	76,100	43,900	50,100	100

POWELL COUNTY

Southern pine	2,900	1,200	400	1,300	--
Oak-pine	6,900	3,300	2,700	900	--
White oak	3,900	1,800	1,900	200	--
Oak-hickory	42,700	24,600	12,400	5,700	--
Central mixed hardwoods	21,500	10,800	3,700	7,000	--
Maple-beech	2,300	900	1,400	--	--
Elm-ash-cottonwood	500	300	--	200	--
All types	80,700	42,900	22,500	15,300	--

ROWAN COUNTY

Southern pine	9,000	3,800	3,000	2,200	--
Oak-pine	12,100	5,900	4,500	1,400	300
White oak	6,300	3,000	2,900	400	--
Oak-hickory	80,100	53,700	18,900	7,300	200
Central mixed hardwoods	29,700	12,200	7,500	9,900	100
Maple-beech	2,300	1,100	1,200	--	--
Elm-ash-cottonwood	1,300	--	200	1,100	--
All types	140,800	79,700	38,200	22,300	600

Table 4. -- *Area of commercial forest land by forest type and stand-size class*
Northern Cumberland Unit, Kentucky, 1963 -- Continued

(In acres)

WOLFE COUNTY

Forest type	All Stands	Saw- timber	Pole- timber	Seedlings and saplings	Non- stocked
Southern pine	11,200	5,800	3,300	2,100	--
Oak-pine	12,100	7,100	3,600	1,400	--
White oak	4,800	1,900	2,600	300	--
Oak-hickory	48,700	25,900	14,700	8,100	--
Central mixed hardwoods	26,700	11,400	4,700	10,600	--
Maple-beech	2,200	1,200	1,000	--	--
Elm-ash-cottonwood	600	--	100	500	--
All types	106,300	53,300	30,000	23,000	--

Table 5. -- *Area of commercial forest land by forest type and site class*
Northern Cumberland Unit, Kentucky, 1963

(In acres)

Forest type	All Sites	Site class (potential growth per acre per year in cubic feet)			
		120 or more	85 to 120	50 to 85	Less than 50
Southern pine	99,500	2,600	46,000	34,500	16,400
Oak-pine	151,200	9,500	76,500	61,200	4,000
White oak	89,400	400	48,900	35,600	4,500
Oak-hickory	917,900	51,200	508,200	341,800	16,700
Central mixed hardwoods	534,200	13,100	144,100	264,000	113,000
Maple-beech	43,500	--	25,800	7,900	9,800
Elm-ash-cottonwood	22,100	7,600	300	14,200	--
All types	1,857,800	84,400	849,800	759,200	164,400

Table 6. -- *Area of commercial forest land by forest type and stand-age class*
Northern Cumberland Unit, Kentucky, 1963

(In acres by age in years)										
Forest type	All ages	Less than 9	10-19	20-29	30-39	40-49	50-59	60-79	80-99	100 or more
Southern pine	99,500	--	23,000	13,600	27,100	10,200	18,700	6,200	500	200
Oak-pine	151,200	9,900	10,000	45,200	26,900	21,500	14,100	17,100	6,000	500
White oak	89,400	--	8,500	800	17,400	13,400	15,700	27,800	5,600	200
Oak-hickory	917,900	4,100	62,100	105,900	139,500	189,600	157,400	117,800	121,300	20,200
Central mixed hardwoods	534,200	24,100	122,800	170,000	72,600	65,800	18,200	37,200	22,600	900
Maple-beech	43,500	4,000	--	3,900	--	19,200	5,400	5,400	--	5,600
Elm-ash-cottonwood	22,100	--	16,100	300	--	5,600	--	100	--	--
All types	1,857,800	42,100	242,500	339,700	283,500	325,300	229,500	211,600	156,000	27,600

Table 7. -- *Area of commercial forest land by forest type and area condition class*
Northern Cumberland Unit, Kentucky, 1963

(In acres)						
Forest type	All area conditions	Desirable	Moderate and favorable	Moderate and unfavorable	Poor but favorable	Poor and unfavorable
Southern pine	99,500	600	13,900	29,100	5,300	50,600
Oak-pine	151,200	1,800	7,500	15,300	15,700	110,900
White oak	89,400	600	13,300	1,500	7,900	66,100
Oak-hickory	917,900	10,100	109,000	99,400	50,300	649,100
Central mixed hardwoods	534,200	3,300	39,800	81,400	62,800	346,900
Maple-beech	43,500	--	--	--	3,900	39,600
Elm-ash-cottonwood	22,100	4,500	--	--	2,700	14,900
All types	1,857,800	20,900	183,500	226,700	148,600	1,278,100

Table 8. -- *Number of growing stock trees on commercial forest land by diameter class and species group*
Northern Cumberland Unit, Kentucky, 1963

(In thousand trees)

D.b.h. class (inches)	All species	Softwoods	Hardwoods
2	365,390	24,130	341,260
4	139,940	21,170	118,770
6	67,330	10,620	56,710
8	36,580	6,190	30,390
10	23,590	3,130	20,460
12	15,340	1,910	13,430
14	8,480	710	7,770
16	3,970	270	3,700
18	2,120	90	2,030
20	970	60	910
22	590	40	550
24+	560	20	540
All diameter classes	664,860	68,340	596,520

Table 9. -- *Volume of growing stock and sawtimber on commercial forest land by ownership and species group*
Northern Cumberland Unit, Kentucky, 1963

Ownership class	Growing stock			Sawtimber		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>
National Forest	120,740	26,770	93,970	293,260	76,990	216,270
Other public	510	50	460	1,790	180	1,610
Forest industry	3,220	--	3,220	11,330	--	11,330
Farmer and miscellaneous private	1,063,660	115,240	948,420	3,628,330	398,350	3,229,980
All ownerships	1,188,130	142,060	1,046,070	3,934,710	475,520	3,459,190

*International 1/4-inch rule.

Table 10. -- *Volume of growing stock and sawtimber on commercial forest land by species and kind of material*
Northern Cumberland Unit, Kentucky, 1963

ALL COUNTIES

Species	Growing stock			Sawtimber		
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	In other stands
	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>
Softwoods:						
Shortleaf pine	49,560	13,860	35,700	199,930	153,270	46,660
Other yellow pines	70,310	30,180	40,130	208,830	146,190	62,640
White pine	8,830	1,740	7,090	31,320	17,760	13,560
Hemlock	12,950	4,100	8,850	34,860	29,590	5,270
Redcedar	410	--	410	580	580	--
Total softwoods	142,060	49,880	92,180	475,520	347,390	128,130
Hardwoods:						
Select white oak	189,390	97,690	91,700	499,780	383,300	116,480
Select red oak	47,810	11,610	36,200	213,830	183,420	30,410
Other white oak	130,070	52,500	77,570	424,670	368,000	56,670
Other red oak	307,820	93,380	214,440	1,256,640	1,070,250	186,390
Hickories	124,140	69,500	54,640	300,730	260,620	40,110
Yellow birch	420	380	40	160	160	--
Hard maple	12,260	6,370	5,890	29,460	22,990	6,470
Beech	37,530	9,650	27,880	161,230	136,370	24,860
Black walnut	7,540	4,100	3,440	18,070	13,590	4,480
Ash	10,520	5,020	5,500	28,670	28,580	90
Soft maple	20,800	11,570	9,230	52,660	46,600	6,060
Sweetgum	1,570	630	940	4,650	1,510	3,140
Blackgum	9,560	3,400	6,160	35,660	33,350	2,310
Cottonwood	420	--	420	2,020	280	1,740
Yellow-poplar	112,660	49,420	63,240	356,800	300,760	56,040
Basswood	7,500	2,250	5,250	29,080	22,600	6,480
Other	26,060	17,260	8,800	45,080	28,610	16,470
Total hardwoods	1,046,070	434,730	611,340	3,459,190	2,900,990	558,200
All species	1,188,130	484,610	703,520	3,934,710	3,248,380	686,330

BOYD COUNTY

Softwoods:						
Shortleaf pine	3,090	1,010	2,080	12,150	10,810	1,340
Other yellow pines	2,150	770	1,380	7,710	5,340	2,370
White pine	210	60	150	840	40	800
Hemlock	350	240	110	560	230	330
Redcedar	70	--	70	100	100	--
Total softwoods	5,870	2,080	3,790	21,360	16,520	4,840
Hardwoods:						
Select white oak	5,070	2,650	2,420	13,610	10,370	3,240
Select red oak	1,130	270	860	5,280	4,660	620
Other white oak	4,110	1,520	2,590	14,670	12,830	1,840
Other red oak	8,980	2,840	6,140	37,190	30,580	6,610
Hickories	3,380	2,090	1,290	7,400	6,660	740
Yellow birch	--	--	--	--	--	--
Hard maple	330	180	150	720	450	270
Beech	960	230	730	4,290	3,720	570
Black walnut	190	120	70	420	280	140
Ash	300	120	180	950	950	--
Soft maple	570	330	240	1,360	1,100	260
Sweetgum	30	20	10	100	--	100
Blackgum	260	90	170	990	790	200
Cottonwood	10	--	10	40	--	40
Yellow-poplar	2,670	1,080	1,590	9,440	7,720	1,720
Basswood	210	70	140	810	540	270
Other	810	520	290	1,550	820	730
Total hardwoods	29,010	12,130	16,880	98,820	81,470	17,350
All species	34,880	14,210	20,670	120,180	97,990	22,190

*International 1/4-inch rule.

Table 10. -- *Volume of growing stock and sawtimber on commercial forest land by species and kind of material*
Northern Cumberland Unit, Kentucky, 1963 -- Continued

CARTER COUNTY

Species	Growing stock			Sawtimber		
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	In other stands
	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>
Softwoods:						
Shortleaf pine	4,590	1,440	3,150	18,670	14,570	4,100
Other yellow pines	7,020	3,040	3,980	22,340	14,930	7,410
White pine	530	160	370	2,130	450	1,680
Hemlock	860	560	300	1,540	870	670
Redcedar	70	--	70	90	90	--
Total softwoods	13,070	5,200	7,870	44,770	30,910	13,860
Hardwoods:						
Select white oak	16,920	8,730	8,190	46,070	33,370	12,700
Select red oak	4,080	980	3,100	19,120	16,000	3,120
Other white oak	11,780	4,720	7,060	39,390	33,850	5,540
Other red oak	27,630	8,320	19,310	116,510	97,420	19,090
Hickories	11,030	6,440	4,590	26,370	22,130	4,240
Yellow birch	30	30	--	--	--	--
Hard maple	1,170	640	530	2,690	2,080	610
Beech	3,580	1,000	2,580	15,100	12,210	2,890
Black walnut	700	390	310	1,710	1,230	480
Ash	1,030	530	500	2,680	2,680	--
Soft maple	1,830	1,050	780	4,620	4,070	550
Sweetgum	130	70	60	370	--	370
Blackgum	780	280	500	3,020	2,850	170
Cottonwood	20	--	20	100	--	100
Yellow-poplar	9,240	4,200	5,040	29,970	24,820	5,150
Basswood	690	230	460	2,640	2,010	630
Other	2,410	1,620	790	4,260	2,300	1,960
Total hardwoods	93,050	39,230	53,820	314,620	257,020	57,600
All species	106,120	44,430	61,690	359,390	287,930	71,460

ELLIOTT COUNTY

Softwoods:						
Shortleaf pine	5,520	2,040	3,480	20,770	18,090	2,680
Other yellow pines	7,490	3,240	4,250	23,910	19,280	4,630
White pine	310	90	220	1,210	330	880
Hemlock	400	270	130	710	450	260
Redcedar	80	--	80	100	100	--
Total softwoods	13,800	5,640	8,160	46,700	38,250	8,450
Hardwoods:						
Select white oak	12,700	6,610	6,090	34,440	26,310	8,130
Select red oak	2,700	610	2,090	12,940	11,130	1,810
Other white oak	8,520	3,260	5,260	29,570	26,200	3,370
Other red oak	19,000	5,290	13,710	82,850	70,820	12,030
Hickories	7,310	4,200	3,110	17,800	15,000	2,800
Yellow birch	20	20	--	--	--	--
Hard maple	660	350	310	1,640	1,340	300
Beech	2,090	600	1,490	8,700	7,290	1,410
Black walnut	440	270	170	910	680	230
Ash	580	280	300	1,630	1,630	--
Soft maple	1,330	780	550	3,200	2,830	370
Sweetgum	70	20	50	260	--	260
Blackgum	650	220	430	2,590	2,310	280
Cottonwood	30	--	30	160	--	160
Yellow-poplar	6,020	2,660	3,360	19,900	16,600	3,300
Basswood	360	120	240	1,360	1,040	320
Other	1,400	970	430	2,210	1,460	750
Total hardwoods	63,880	26,260	37,620	220,160	184,640	35,520
All species	77,680	31,900	45,780	266,860	222,890	43,970

*International 1/4-inch rule.

Table 10. -- *Volume of growing stock and sawtimber on commercial forest land by species and kind of material*
Northern Cumberland Unit, Kentucky, 1963 -- Continued

GREENUP COUNTY						
Species	Growing stock			Sawtimber		
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	In other stands
	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>
Softwoods:						
Shortleaf pine	4,010	1,090	2,920	17,340	14,010	3,330
Other yellow pines	4,830	2,140	2,690	15,250	10,060	5,190
White pine	310	100	210	1,210	630	580
Hemlock	280	90	190	940	790	150
Redcedar	--	--	--	--	--	--
Total softwoods	9,430	3,420	6,010	34,740	25,490	9,250
Hardwoods:						
Select white oak	16,220	7,870	8,350	46,980	36,720	10,260
Select red oak	4,150	930	3,220	19,660	17,130	2,530
Other white oak	10,770	4,300	6,470	35,800	31,100	4,700
Other red oak	26,400	7,260	19,140	115,210	101,700	13,510
Hickories	10,150	5,640	4,510	25,960	22,450	3,510
Yellow birch	50	50	--	--	--	--
Hard maple	1,090	570	520	2,720	2,290	430
Beech	3,650	1,070	2,580	15,000	12,710	2,290
Black walnut	640	320	320	1,680	1,230	450
Ash	870	400	470	2,560	2,560	--
Soft maple	1,820	1,040	780	4,570	4,300	270
Sweetgum	120	30	90	530	--	530
Blackgum	700	260	440	2,670	2,630	40
Cottonwood	20	--	20	120	--	120
Yellow-poplar	8,160	3,400	4,760	28,140	23,740	4,400
Basswood	660	210	450	2,580	1,910	670
Other	2,120	1,450	670	3,630	2,130	1,500
Total hardwoods	87,590	34,800	52,790	307,810	262,600	45,210
All species	97,020	38,220	58,800	342,550	288,090	54,460
JOHNSON COUNTY						
Softwoods:						
Shortleaf pine	2,450	390	2,060	12,240	8,770	3,470
Other yellow pines	4,310	1,840	2,470	13,960	9,690	4,270
White pine	250	70	180	1,070	540	530
Hemlock	310	140	170	860	720	140
Redcedar	50	--	50	60	60	--
Total softwoods	7,370	2,440	4,930	28,190	19,780	8,410
Hardwoods:						
Select white oak	14,390	6,960	7,430	41,680	32,340	9,340
Select red oak	3,730	890	2,840	17,420	14,760	2,660
Other white oak	10,140	3,860	6,280	35,040	30,480	4,560
Other red oak	23,450	6,790	16,660	100,450	87,100	13,350
Hickories	9,000	4,980	4,020	23,080	19,530	3,550
Yellow birch	50	50	--	--	--	--
Hard maple	990	560	430	2,250	1,950	300
Beech	3,250	950	2,300	13,250	10,660	2,590
Black walnut	630	320	310	1,670	1,230	440
Ash	820	390	430	2,310	2,310	--
Soft maple	1,600	930	670	3,900	3,560	340
Sweetgum	90	40	50	310	--	310
Blackgum	630	240	390	2,380	2,340	40
Cottonwood	30	--	30	140	--	140
Yellow-poplar	7,660	3,420	4,240	25,070	21,210	3,860
Basswood	580	170	410	2,340	1,630	710
Other	1,810	1,230	580	2,990	1,700	1,290
Total hardwoods	78,850	31,780	47,070	274,280	230,800	43,480
All species	86,220	34,220	52,000	302,470	250,580	51,890

*International 1/4-inch rule.

Table 10. -- Volume of growing stock and sawtimber on commercial forest land by species and kind of material
Northern Cumberland Unit, Kentucky, 1963 -- Continued

LAWRENCE COUNTY

Species	Growing stock			Sawtimber		
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	In other stands
	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>
Softwoods:						
Shortleaf pine	3,250	810	2,440	13,840	5,550	8,290
Other yellow pines	6,490	2,960	3,530	20,340	13,950	6,390
White pine	220	20	200	1,210	140	1,070
Hemlock	400	160	240	1,150	940	210
Redcedar	20	--	20	20	20	--
Total softwoods	10,380	3,950	6,430	36,560	20,600	15,960
Hardwoods:						
Select white oak	15,280	8,930	6,350	35,760	17,970	17,790
Select red oak	3,880	1,270	2,610	16,180	12,320	3,860
Other white oak	10,410	4,830	5,580	31,200	24,410	6,790
Other red oak	20,430	8,030	12,400	74,170	52,680	21,490
Hickories	11,280	7,480	3,800	21,670	17,980	3,690
Yellow birch	20	20	--	--	--	--
Hard maple	1,330	690	640	2,950	1,660	1,290
Beech	2,880	730	2,150	12,710	9,860	2,850
Black walnut	780	440	340	1,910	1,350	560
Ash	1,040	570	470	2,490	2,490	--
Soft maple	1,560	920	640	3,750	2,720	1,030
Sweetgum	100	80	20	100	--	100
Blackgum	690	300	390	2,360	2,360	--
Cottonwood	40	--	40	200	--	200
Yellow-poplar	11,860	6,520	5,340	32,110	23,770	8,340
Basswood	660	190	470	2,820	2,030	790
Other	2,860	2,040	820	4,410	1,480	2,930
Total hardwoods	85,100	43,040	42,060	244,790	173,080	71,710
All species	95,480	46,990	48,490	281,350	193,680	87,670

LEWIS COUNTY

Softwoods:						
Shortleaf pine	4,130	840	3,290	19,440	15,410	4,030
Other yellow pines	5,180	2,380	2,800	15,870	9,890	5,980
White pine	470	190	280	1,660	750	910
Hemlock	520	230	290	1,470	1,220	250
Redcedar	--	--	--	--	--	--
Total softwoods	10,300	3,640	6,660	38,440	27,270	11,170
Hardwoods:						
Select white oak	26,910	13,210	13,700	77,510	64,230	13,280
Select red oak	6,800	1,420	5,380	32,860	28,830	4,030
Other white oak	18,740	6,900	11,840	65,890	59,100	6,790
Other red oak	45,550	11,940	33,610	203,110	183,230	19,880
Hickories	17,270	8,990	8,280	47,690	42,020	5,670
Yellow birch	50	50	--	--	--	--
Hard maple	1,680	870	810	4,310	3,490	820
Beech	5,420	1,540	3,880	22,570	18,900	3,670
Black walnut	870	490	380	2,120	1,410	710
Ash	1,580	670	910	4,780	4,780	--
Soft maple	3,080	1,700	1,380	8,040	7,510	530
Sweetgum	130	90	40	260	--	260
Blackgum	1,300	480	820	4,960	4,880	80
Cottonwood	70	--	70	350	--	350
Yellow-poplar	14,470	5,700	8,770	51,880	45,980	5,900
Basswood	1,030	350	680	3,830	3,100	730
Other	3,170	2,040	1,130	6,160	4,320	1,840
Total hardwoods	148,120	56,440	91,680	536,320	471,780	64,540
All species	158,420	60,080	98,340	574,760	499,050	75,710

*International 1/4-inch rule.

Table 10. -- *Volume of growing stock and sawtimber on commercial forest land by species and kind of material*
Northern Cumberland Unit, Kentucky, 1963 -- Continued

MAGOFFIN COUNTY

Species	Growing stock			Sawtimber		
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	In other stands
	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>
Softwoods:						
Shortleaf pine	2,240	470	1,770	9,980	4,100	5,880
Other yellow pines	3,120	1,650	1,470	8,070	4,020	4,050
White pine	300	60	240	1,340	240	1,100
Hemlock	410	190	220	1,040	910	130
Redcedar	--	--	--	--	--	--
Total softwoods	6,070	2,370	3,700	20,430	9,270	11,160
Hardwoods:						
Select white oak	13,260	7,430	5,830	32,830	23,810	9,020
Select red oak	3,660	960	2,700	16,480	14,180	2,300
Other white oak	10,640	4,540	6,100	34,120	28,170	5,950
Other red oak	22,550	7,110	15,440	94,020	76,030	17,990
Hickories	9,610	5,590	4,020	23,130	20,480	2,650
Yellow birch	20	20	--	--	--	--
Hard maple	990	500	490	2,400	1,750	650
Beech	3,450	650	2,800	17,110	15,240	1,870
Black walnut	710	360	350	1,860	1,530	330
Ash	850	440	410	2,150	2,150	--
Soft maple	1,950	1,100	850	4,950	4,350	600
Sweetgum	40	30	10	110	--	110
Blackgum	840	320	520	3,150	3,150	--
Cottonwood	20	--	20	90	--	90
Yellow-poplar	10,360	5,190	5,170	31,110	24,080	7,030
Basswood	640	170	470	2,780	2,170	610
Other	2,510	1,840	670	3,600	2,120	1,480
Total hardwoods	82,100	36,250	45,850	269,890	219,210	50,680
All species	88,170	38,620	49,550	290,320	228,480	61,840

MENIFEE COUNTY

Softwoods:						
Shortleaf pine	4,330	1,550	2,780	15,300	12,820	2,480
Other yellow pines	7,570	3,000	4,570	19,520	14,560	4,960
White pine	720	160	560	2,260	1,220	1,040
Hemlock	4,750	740	4,010	14,530	13,820	710
Redcedar	20	--	20	70	70	--
Total softwoods	17,390	5,450	11,940	51,680	42,490	9,190
Hardwoods:						
Select white oak	15,080	7,920	7,160	34,630	29,210	5,420
Select red oak	3,320	790	2,530	13,450	11,360	2,090
Other white oak	7,320	3,150	4,170	21,570	19,340	2,230
Other red oak	20,580	6,510	14,070	77,590	66,030	11,560
Hickories	9,110	4,830	4,280	21,590	18,890	2,700
Yellow birch	90	50	40	160	160	--
Hard maple	740	380	360	1,760	1,500	260
Beech	2,330	550	1,780	9,270	8,250	1,020
Black walnut	550	350	200	900	700	200
Ash	740	360	380	1,780	1,780	--
Soft maple	1,370	680	690	3,890	3,550	340
Sweetgum	190	60	130	600	290	310
Blackgum	700	230	470	2,290	2,050	240
Cottonwood	20	--	20	100	--	100
Yellow-poplar	8,790	3,320	5,470	25,040	23,010	2,030
Basswood	700	170	530	2,740	2,420	320
Other	1,730	870	860	3,250	2,680	570
Total hardwoods	73,360	30,220	43,140	220,610	191,220	29,390
All species	90,750	35,670	55,080	272,290	233,710	38,580

*International 1/4-inch rule.

Table 10. -- *Volume of growing stock and sawtimber on commercial forest land by species and kind of material*
Northern Cumberland Unit, Kentucky, 1962 -- Continued

MORGAN COUNTY

Species	Growing stock			Sawtimber		
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	In other stands
	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>
Softwoods:						
Shortleaf pine	3,960	1,070	2,890	16,350	12,200	4,150
Other yellow pines	4,740	2,210	2,530	13,280	8,140	5,140
White pine	480	150	330	1,850	290	1,560
Hemlock	950	450	500	2,200	1,580	620
Redcedar	10	--	10	20	20	--
Total softwoods	10,140	3,880	6,260	33,700	22,230	11,470
Hardwoods:						
Select white oak	17,250	9,090	8,160	44,960	36,020	8,940
Select red oak	4,620	1,140	3,480	20,490	18,220	2,270
Other white oak	12,260	5,070	7,190	39,700	34,660	5,040
Other red oak	28,400	8,160	20,240	120,610	103,110	17,500
Hickories	11,180	6,200	4,980	28,050	25,010	3,040
Yellow birch	20	20	--	--	--	--
Hard maple	1,090	540	550	2,690	1,960	730
Beech	3,430	790	2,640	15,710	13,600	2,110
Black walnut	590	350	240	1,340	1,050	290
Ash	960	470	490	2,540	2,540	--
Soft maple	2,040	1,130	910	5,270	4,620	650
Sweetgum	100	40	60	310	--	310
Blackgum	970	350	620	3,790	3,540	250
Cottonwood	30	--	30	160	--	160
Yellow-poplar	11,650	5,340	6,310	36,310	29,990	6,320
Basswood	720	210	510	2,880	2,420	460
Other	2,420	1,660	760	4,060	2,490	1,570
Total hardwoods	97,730	40,560	57,170	328,870	279,230	49,640
All species	107,870	44,440	63,430	362,570	301,460	61,110

POWELL COUNTY

Softwoods:						
Shortleaf pine	1,360	230	1,130	6,490	4,480	2,010
Other yellow pines	3,610	1,420	2,190	10,240	7,230	3,010
White pine	440	90	350	1,640	960	680
Hemlock	510	150	360	1,350	790	560
Redcedar	--	--	--	--	--	--
Total softwoods	5,920	1,890	4,030	19,720	13,460	6,260
Hardwoods:						
Select white oak	9,760	4,570	5,190	25,710	20,670	5,040
Select red oak	2,610	630	1,980	11,400	9,940	1,460
Other white oak	5,860	2,390	3,470	18,760	16,110	2,650
Other red oak	16,690	5,030	11,660	63,690	54,960	8,730
Hickories	6,330	3,260	3,070	15,140	13,640	1,500
Yellow birch	30	30	--	--	--	--
Hard maple	840	390	450	2,120	1,900	220
Beech	2,190	530	1,660	8,530	7,340	1,190
Black walnut	370	140	230	890	750	140
Ash	570	220	350	1,630	1,630	--
Soft maple	1,000	520	480	2,740	2,470	270
Sweetgum	80	40	40	200	90	110
Blackgum	470	130	340	1,580	1,460	120
Cottonwood	10	--	10	70	--	70
Yellow-poplar	6,320	2,200	4,120	20,620	18,470	2,150
Basswood	400	120	280	1,210	950	260
Other	1,610	1,180	430	3,580	3,020	560
Total hardwoods	55,140	21,380	33,760	177,870	153,400	24,470
All species	61,060	23,270	37,790	197,590	166,860	30,730

*International 1/4-inch rule.

Table 10. -- *Volume of growing stock and sawtimber on commercial forest land by species and kind of material*
Northern Cumberland Unit, Kentucky, 1963 -- Continued

ROWAN COUNTY

Species	Growing stock			Sawtimber		
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	In other stands
	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>
Softwoods:						
Shortleaf pine	5,770	1,590	4,180	20,140	17,610	2,530
Other yellow pines	7,420	2,970	4,450	20,060	14,310	5,750
White pine	290	90	200	1,150	310	840
Hemlock	610	430	180	970	590	380
Redcedar	60	--	60	80	80	--
Total softwoods	14,150	5,080	9,070	42,400	32,900	9,500
Hardwoods:						
Select white oak	15,580	7,960	7,620	37,970	31,180	6,790
Select red oak	4,740	1,160	3,580	17,290	15,270	2,020
Other white oak	12,850	5,310	7,540	36,310	32,000	4,310
Other red oak	30,270	10,170	20,100	103,070	87,970	15,100
Hickories	11,700	5,960	5,740	26,280	22,750	3,530
Yellow birch	20	20	--	--	--	--
Hard maple	630	320	310	1,310	1,020	290
Beech	2,260	500	1,760	10,100	8,840	1,260
Black walnut	700	350	350	1,760	1,430	330
Ash	640	320	320	1,640	1,550	90
Soft maple	1,180	640	540	2,860	2,440	420
Sweetgum	380	80	300	1,180	970	210
Blackgum	980	320	660	3,490	3,010	480
Cottonwood	100	--	100	380	280	100
Yellow-poplar	9,060	3,840	5,220	26,090	22,820	3,270
Basswood	500	140	360	1,660	1,260	400
Other	1,660	940	720	2,530	1,980	550
Total hardwoods	93,250	38,030	55,220	273,920	234,770	39,150
All species	107,400	43,110	64,290	316,320	267,670	48,650

WOLFE COUNTY

Softwoods:						
Shortleaf pine	4,860	1,330	3,530	17,220	14,850	2,370
Other yellow pines	6,380	2,560	3,820	18,280	14,790	3,490
White pine	4,300	500	3,800	13,750	11,860	1,890
Hemlock	2,600	450	2,150	7,540	6,680	860
Redcedar	30	--	30	40	40	--
Total softwoods	18,170	4,840	13,330	56,830	48,220	8,610
Hardwoods:						
Select white oak	10,970	5,760	5,210	27,630	21,100	6,530
Select red oak	2,390	560	1,830	11,260	9,620	1,640
Other white oak	6,670	2,650	4,020	22,650	19,750	2,900
Other red oak	17,890	5,930	11,960	68,170	58,620	9,550
Hickories	6,790	3,840	2,950	16,570	14,080	2,490
Yellow birch	20	20	--	--	--	--
Hard maple	720	380	340	1,900	1,600	300
Beech	2,040	510	1,530	8,890	7,750	1,140
Black walnut	370	200	170	900	720	180
Ash	540	250	290	1,530	1,530	--
Soft maple	1,470	750	720	3,510	3,080	430
Sweetgum	110	30	80	320	160	160
Blackgum	590	180	410	2,390	1,980	410
Cottonwood	20	--	20	110	--	110
Yellow-poplar	6,400	2,550	3,850	21,120	18,550	2,570
Basswood	350	100	250	1,430	1,120	310
Other	1,550	900	650	2,850	2,110	740
Total hardwoods	58,890	24,610	34,280	191,230	161,770	29,460
All species	77,060	29,450	47,610	248,060	209,990	38,070

*International 1/4-inch rule.

Table 11. -- Volume of growing stock trees on commercial forest land by species and diameter class
Northern Cumberland Unit, Kentucky, 1963

(In thousand cubic feet)

Species	All diameters	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 and larger
Softwoods:											
Shorleaf pine	49,560	5,510	8,350	8,230	13,110	8,830	2,560	860	710	1,400	--
Other yellow pines	70,310	14,270	15,910	15,060	12,950	5,970	4,090	940	670	360	90
White pine	8,830	780	960	2,460	560	430	770	1,070	900	380	520
Hemlock	12,950	1,680	2,420	700	1,660	940	1,120	1,200	710	1,070	1,450
Redcedar	410	--	--	410	--	--	--	--	--	--	--
Total softwoods	142,060	22,240	27,640	26,860	28,280	16,170	8,540	4,070	2,990	3,210	2,060
Hardwoods:											
Select white oak	189,390	20,590	34,980	42,120	34,040	27,670	11,000	9,070	4,140	2,150	3,630
Select red oak	47,810	2,110	3,400	6,100	7,580	8,740	5,730	2,340	3,510	3,260	5,040
Other white oak	130,070	14,260	17,310	20,930	28,710	19,290	12,610	7,950	2,540	1,150	5,320
Other red oak	307,820	22,750	29,630	41,000	49,840	46,700	41,090	27,900	18,730	13,030	17,150
Hickories	124,140	24,030	23,480	21,990	20,610	14,070	8,580	4,960	3,720	800	1,900
Yellow birch	420	--	--	380	--	--	--	40	--	--	--
Hard maple	12,260	2,090	1,750	2,530	1,820	2,050	480	920	80	480	60
Beech	37,530	1,640	4,040	3,970	4,190	4,470	3,030	3,900	2,150	2,440	7,700
Black walnut	7,540	1,010	1,590	1,500	2,240	1,120	80	--	--	--	--
Ash	10,520	1,160	2,070	1,790	1,420	2,170	1,290	240	30	--	350
Soft maple	20,800	3,970	4,080	3,520	2,160	3,290	600	470	880	1,400	430
Sweetgum	1,570	40	240	350	100	540	130	40	70	--	60
Blackgum	9,560	960	630	1,810	1,230	1,350	1,990	920	640	--	30
Cottonwood	420	--	--	--	380	--	40	--	--	--	--
Yellow-poplar	112,660	18,920	15,920	14,580	16,820	15,480	10,520	10,120	3,990	4,460	1,850
Basswood	7,500	280	90	1,880	2,370	1,390	80	380	420	490	120
Other	26,060	8,210	4,080	4,970	2,920	2,440	1,990	790	170	330	160
Total hardwoods	1,046,070	122,020	143,290	169,420	176,430	150,770	99,240	70,040	41,070	29,990	43,800
All species	1,188,130	144,260	170,930	196,280	204,710	166,940	107,780	74,110	44,060	33,200	45,860

Table 12. -- Volume of sawtimber on commercial forest land by species and diameter class
Northern Cumberland Unit, Kentucky, 1963

(In thousand board feet*)

Species	All diameters	9.0-10.9**	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0 and larger
Softwoods:									
Shortleaf pine	199,930	40,440	76,120	49,900	15,530	4,590	4,750	8,600	--
Other yellow pines	208,830	74,810	68,390	32,370	21,810	4,410	4,030	2,690	320
White pine	31,320	11,990	1,910	1,540	2,720	5,040	4,910	1,340	1,870
Hemlock	34,860	3,500	6,900	4,020	4,020	4,160	2,380	4,720	5,160
Redcedar	580	580	--	--	--	--	--	--	--
Total softwoods	475,520	131,320	153,320	87,830	44,080	18,200	16,070	17,350	7,350
Hardwoods:									
Select white oak	499,780	--	177,130	152,190	59,630	52,100	22,390	12,530	23,810
Select red oak	213,830	--	39,000	50,850	34,030	13,860	21,230	21,330	33,530
Other white oak	424,670	--	142,880	107,360	71,730	47,170	16,860	6,420	32,250
Other red oak	1,256,640	--	256,530	264,360	243,450	171,360	117,430	85,680	117,830
Hickories	300,730	--	108,750	74,440	50,270	28,940	21,050	5,290	11,990
Yellow birch	160	--	--	--	--	160	--	--	--
Hard maple	29,460	--	8,030	10,880	2,860	4,950	330	2,130	280
Beech	161,230	--	20,380	22,370	17,410	23,660	11,960	16,180	49,270
Black walnut	18,070	--	11,690	6,090	290	--	--	--	--
Ash	28,670	--	6,070	11,920	7,240	1,370	100	--	1,970
Soft maple	52,660	--	12,640	17,770	3,130	2,660	4,980	8,990	2,490
Sweetgum	4,650	--	320	3,130	490	160	280	--	270
Blackgum	35,660	--	6,480	7,660	12,110	5,550	3,750	--	110
Cottonwood	2,020	--	1,860	--	160	--	--	--	--
Yellow-poplar	356,800	--	85,430	84,710	60,750	60,440	23,790	28,110	13,570
Basswood	29,080	--	12,310	7,880	310	2,170	2,480	3,370	560
Other	45,080	--	12,930	13,290	10,720	4,750	630	1,960	800
Total hardwoods	3,459,190	--	902,430	834,900	574,580	419,300	247,260	191,990	288,730
All species	3,934,710	131,320	1,055,750	922,730	618,660	437,500	263,330	209,340	296,080

*International 1/4-inch rule.

**Softwoods only.

Table 13. -- *Net annual growth on commercial forest land by species and kind of material*
Northern Cumberland Unit, Kentucky, 1963

Species	Growing stock			Sawtimber		
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	In other stands
	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>
Softwoods:						
Shortleaf pine	3,550	1,720	1,830	19,680	13,300	6,380
Other yellow pines	5,270	3,280	1,990	27,990	12,990	15,000
White pine	510	210	300	2,600	890	1,710
Hemlock	760	480	280	3,210	980	2,230
Redcedar	10	--	10	110	110	--
Total softwoods	10,100	5,690	4,410	53,590	28,270	25,320
Hardwoods:						
Select white oak	8,950	6,570	2,380	44,640	22,830	21,810
Select red oak	2,060	990	1,070	12,050	7,980	4,070
Other white oak	5,630	3,920	1,710	26,560	17,490	9,070
Other red oak	12,850	7,100	5,750	69,580	45,050	24,530
Hickories	6,380	5,210	1,170	22,690	12,130	10,560
Yellow birch	20	20	--	330	330	--
Hard maple	650	490	160	2,550	1,170	1,380
Beech	1,000	520	480	5,180	2,930	2,250
Black walnut	520	390	130	2,040	1,370	670
Ash	540	400	140	2,310	1,450	860
Soft maple	1,340	1,070	270	5,210	3,920	1,290
Sweetgum	260	240	20	430	--	430
Blackgum	530	400	130	2,020	1,510	510
Cottonwood	30	--	30	240	--	240
Yellow-poplar	11,150	7,920	3,230	38,300	24,640	13,660
Basswood	420	180	240	3,290	2,150	1,140
Other	1,390	1,270	120	4,770	2,490	2,280
Total hardwoods	53,720	36,690	17,030	242,190	147,440	94,750
All species	63,820	42,380	21,440	295,780	175,710	120,070

*International 1/4-inch rule.

Table 14. -- *Net annual growth on commercial forest land by county and species group*
Northern Cumberland Unit, Kentucky, 1963

County	Growing stock			Sawtimber		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>
Boyd	2,050	470	1,580	9,500	2,390	7,110
Carter	6,120	1,080	5,040	29,280	5,860	23,420
Elliott	4,450	1,140	3,310	22,170	6,290	15,880
Greenup	5,280	720	4,560	25,430	3,860	21,570
Johnson	4,680	540	4,140	22,340	2,800	19,540
Lawrence	6,590	840	5,750	26,600	4,860	21,740
Lewis	8,090	760	7,330	40,180	4,200	35,980
Magoffin	5,200	390	4,810	23,160	2,860	20,300
Menifee	4,110	1,040	3,070	18,820	5,250	13,570
Morgan	5,880	770	5,110	27,470	4,320	23,150
Powell	2,830	380	2,450	13,020	1,840	11,180
Rowan	4,660	950	3,710	19,890	4,240	15,650
Wolfe	3,880	1,020	2,860	17,920	4,820	13,100
Total	63,820	10,100	53,720	295,780	53,590	242,190

*International 1/4-inch rule.

Table 15. -- *Timber cut from commercial forest land by species and kind of material*
Northern Cumberland Unit, Kentucky, 1962

Species	Growing stock			Sawtimber
	Total	Poletimber trees	Sawtimber trees	Total
	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand bd. ft.*</i>
Softwoods:				
Shortleaf pine	1,170	690	480	2,490
Other yellow pines	470	100	370	1,940
White pine	160	10	150	770
Hemlock	130	10	120	600
Redcedar	50	50	--	20
Total softwoods	1,980	860	1,120	5,820
Hardwoods:				
Select white oak	1,080	110	970	6,130
Select red oak	2,840	230	2,610	16,960
Other white oak	700	250	450	2,850
Other red oak	1,670	380	1,290	8,280
Hickories	490	150	340	2,210
Yellow birch	--	--	--	--
Hard maple	520	360	160	990
Beech	880	380	500	3,370
Black walnut	220	10	210	1,480
Ash	560	360	200	1,260
Soft maple	330	20	310	2,030
Sweetgum	20	--	20	140
Blackgum	80	--	80	510
Cottonwood	60	20	40	260
Yellow-poplar	3,270	110	3,160	21,670
Basswood	650	40	610	4,030
Other	380	70	310	2,070
Total hardwoods	13,750	2,490	11,260	74,240
All species	15,730	3,350	12,380	80,060

*International 1/4-inch rule.

Table 16. -- *Timber cut from commercial forest land by ownership and species group*
Northern Cumberland Unit, Kentucky, 1962

Ownership class	Growing stock			Sawtimber		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>
National Forest	870	460	410	4,670	2,080	2,590
Other public	10	--	10	90	--	90
Forest industry	10	--	10	30	--	30
Farmer and miscellaneous private	14,840	1,520	13,320	75,270	3,740	71,530
All ownerships	15,730	1,980	13,750	80,060	5,820	74,240

*International 1/4-inch rule.

Table 17. -- *Net annual desirable cut on commercial forest land by species and kind of material*
Northern Cumberland Unit, Kentucky, 1963

Species	Growing stock			Sawtimber		
	Total	Poletimber trees	Sawtimber trees	Total	In sawtimber stands	In other stands
	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>
Softwoods:						
Shortleaf pine	1,490	270	1,220	7,150	6,480	670
Other yellow pines	1,150	380	770	3,880	3,000	880
White pine	150	10	140	700	320	380
Hemlock	230	50	180	880	850	30
Redcedar	--	--	--	--	--	--
Total softwoods	3,020	710	2,310	12,610	10,650	1,960
Hardwoods:						
Select white oak	5,070	2,350	2,720	14,640	13,340	1,300
Select red oak	1,780	220	1,560	9,380	8,390	990
Other white oak	4,630	1,500	3,130	17,740	16,250	1,490
Other red oak	11,890	2,110	9,780	59,770	56,790	2,980
Hickories	2,970	1,120	1,850	10,190	9,520	670
Yellow birch	20	20	--	10	10	--
Hard maple	240	140	100	470	470	--
Beech	1,110	200	910	5,380	5,340	40
Black walnut	140	60	80	380	330	50
Ash	400	140	260	1,310	1,310	--
Soft maple	940	500	440	2,600	2,600	--
Sweetgum	30	--	30	150	30	120
Blackgum	340	180	160	1,040	1,030	10
Cottonwood	--	--	--	10	10	--
Yellow-poplar	2,140	550	1,590	9,690	9,230	460
Basswood	180	70	110	710	680	30
Other	560	290	270	1,330	1,270	60
Total hardwoods	32,440	9,450	22,990	134,800	126,600	8,200
All species	35,460	10,160	25,300	147,410	137,250	10,160

*International 1/4-inch rule.

Table 18. -- *Net annual desirable cut on commercial forest land by county and species group*
Northern Cumberland Unit, Kentucky, 1963

County	Growing stock			Sawtimber		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand cu. ft.</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>	<i>Thousand bd. ft.*</i>
Boyd	1,070	130	940	4,540	580	3,960
Carter	3,300	290	3,010	13,800	1,210	12,590
Elliott	2,360	300	2,060	10,060	1,250	8,810
Greenup	3,040	210	2,830	13,250	940	12,310
Johnson	2,710	160	2,550	11,740	760	10,980
Lawrence	2,980	230	2,750	10,790	990	9,800
Lewis	5,030	230	4,800	22,500	1,040	21,460
Magoffin	2,780	130	2,650	11,350	550	10,800
Menifee	2,340	350	1,990	9,230	1,310	7,920
Morgan	3,290	210	3,080	13,820	890	12,930
Powell	1,720	130	1,590	7,080	490	6,590
Rowan	2,670	280	2,390	10,380	1,070	9,310
Wolfe	2,170	370	1,800	8,870	1,530	7,340
Total	35,460	3,020	32,440	147,410	12,610	134,800

*International 1/4-inch rule.

THE AUTHORS



DAVID A. GANSNER began his Forest Service career in 1958 at the Lake States Forest Experiment Station, working on the Forest Survey in Missouri and Minnesota. In 1961 he moved to the Central States Station and his present job as Forest Survey Representative. A native of Missouri, Dave received his degree in forestry from the University of Missouri. He is a member of the Society of American Foresters, Xi Sigma Pi (honorary forestry society), and Gamma Sigma Delta (agricultural honor society).

PAUL S. DeBALD recently transferred to the Central States Forest Experiment Station from the Lake States Station where he began his Forest Service career in 1959. DeBald is experienced in all phases of forest survey work. Born in Pittsburgh, Paul graduated in forestry from the Pennsylvania State University. He is a member of the Society of American Foresters, Tau Phi Delta (professional forestry fraternity), and Xi Sigma Pi (honorary forestry society).



